Amendments to the Drawings

1.   Figure 2 was amended to add missing reference numbers 231 and 233, and to correct reference number 201. A full replacement sheet is attached.

2.   Figure 3 was amended to add missing reference numbers 331 and 333. A full replacement sheet is attached.

3.   Figure 5 was amended to correct reference numbers 541, 542, 543, and 544. A full replacement sheet is attached.

4.   Figure 6 was amended to remove unnecessary reference numbers 623 and 624. A full replacement sheet is attached.

5.   Figure 11 was amended to more distinctly point out the elements to which the reference numbers were pointing. Now, 1104 clearly points to the left side column of graphs while 1102 clearly points to the right side column of graphs. Also, unnecessary reference number 1100 was removed. A full replacement sheet is attached.

6.   Figure 12 was amended to correct reference number 1202. A full replacement sheet is attached.

7.   Figure 14 was amended to add reference number 1400 and to delete duplicative reference number 1410 from the Network Interface block. A full replacement sheet is attached.

REMARKS

Claims 1-21 are pending in the present application. Claims 1, 12, and 18 are independent claims. Claims 2-11 ultimately depend upon claim 1; claims 13-17 ultimately depend upon claim 12; and claims 19-21 ultimately depend upon claim 18.

Examiner has allowed claims 18 through 21, but has objected to claims 3, 5-9, 11, and 15 as being dependent upon a rejected base claim. Examiner further stated that claims 3, 5-9, 11, and 15 would be allowed if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

TELEPHONIC INTERVIEW SUMMARY– JULY 17, 2007 CALL TO EXAMINER

On July 17, 2007 Steven H. Washam, patent counsel, phoned Examiner to briefly discuss how to rewrite dependent claim 15 in independent form if the base claim [claim 12] was objected to (see Claim Objections section of this reply for details of objection). Examiner indicated that the objection must be satisfied first, and that claim 12 must be incorporated into the language of claim 15. No other matter was discussed.

DRAWING OBJECTIONS

Examiner objected to several of drawings as failing to comply with 37 C.F.R. § 1.84(p)(5). Figures 2, 3, 5, 6, 11, 12, and 14 were corrected by submitting replacement sheets whith appropriate drawing amendments. A more detailed discussion is included in the *Amendments to the Drawings* section of this reply. Figures 9 and 10 were corrected by submitting replacement specification paragraphs to correct the reference number designations. A more detailed discussion is included in the *Amendments to the Specification* section of this reply. Applicant believes the foregoing amendments overcome Examiner's drawing objections and respectfully requests the drawing objections be withdrawn.

CLAIM OBJECTIONS

Claim 12

Examiner objected to Claim 12 because of a missing word in the last element. This claim has been amended to provide the appropriate word as originally intended by Applicant in order to satisfy and to overcome Examiner's objection. Applicant respectfully requests that this objection now be withdrawn.

CLAIM REJECTIONS – 35 U.S.C. § 102
Claims 1, 2, 4, 10, 12-14, 16, and 17

Examiner rejected claims 1, 2, 4, 10, 12-14, 16, and 17 under 35 U.S.C. § 102(e) as being anticipated by Tancevski (US 2006/0092958). More specifically, Examiner stated:

> 4. In regards to claim 1, Tancevski discloses a network comprising: a plurality of data channels (figure 2 element 24); a control channel (fig. 2.22); tokens which pass between nodes on the control channel (fig. 4.30); wherein tokens advertise availability of receivers at a destination node and notify a source when a transmission did not succeed (paragraph 27).

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. In re Bond, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990).

Tancevski fails to teach every element exactly as arranged in claim 1 of the claimed invention and thus fails to anticipate claim 1. Tancevski's assertion (par. 27) that the "round-trip time" of a token (or "slot") can be reduced to 50 microseconds is demonstrably false, as follows.

First, note that Tancevski identifies "round trip time" as "the time between slots associated with the same station" (par. 26). In Tancevski's exemplary 100 km ring, he claims that each token/slot requires 500 microseconds (0.5 milliseconds) to circulate completely around the ring. It should be clear that any data written to a specific token/slot takes the same amount of time to circulate completely around the ring.

Further, Tancevski assumes a channel reservation acknowledgement by the receiving station prior to the commencement of active transmission (par. 27). Therefore, the time required to set up a channel for transmission can be broken down into three parts: (a) the time required for

the sending station to receive one of its own control channel slots/tokens to be able to initially write its reservation request in said slot; (b) the time required for the slot to propagate around the ring to the desired receiving station; and (c) the time required for the receiving station's ACK or NACK to transit the ring to the sending station. (After receipt of the ACK, additional time will be required for the beginning of the actual transmission to propagate to the receiving node.)

Distributing a plurality of slots for each station in circulation around the control channel can reduce the maximum slot-arrival time (a) to approximately 50 microseconds. However, the remaining time (b + c) will not be reduced in the least, since the request will need to travel around the ring circumference to the desired receiving station, and its ACK or NACK will need to complete the journey around the ring circumference to the sending station before data transmission may begin. Therefore, the actual round-trip time of the request/acknowledgement pair of communications remains in excess of 500 microseconds. Based on Tancevski's exemplary data calculations and his exemplary transmission speed of 10 Gb/sec, such a delay would call for buffering as much as or more than half a megabyte of extra data, which is clearly non-negligible, and far from "substantially instantaneous."

In a wider context, the claimed invention does not depend on requests and acknowledgements like that of Tancevski. In contrast to Tancevski, each station (of the claimed invention) maintains only local information pertaining to its own local apparatus and status, and all the other info used to coordinate the activities of the stations resides on the circulating tokens themselves.

The core of the claimed invention is not only (a) that a payload and its announcement token will arrive at a receiving station simultaneously, but also (b) the resulting implication that without any external request or acknowledgement (based only on local station information combined with the information in the token-in-hand), said announcement token and said payload are sent simultaneously, appropriating (1) the required links on the path to the receiving node and (2) the receiving node's receiver.

Further, Examiner states that Tancevski discloses tokens advertising availability of receivers (par. 27). In reality, Tancevski's token provides only "ACTIVE/IDLE" status notification. Tancevski does not require explicit token info about receivers, since his reservation-based scheme uses requests and acknowledgements, and the receiving node can let the sending node know whether to proceed with the transmission. Rather, Tancevski's token tells only about available channels. Tancevski treats each channel as unitary, allocating it all-or-nothing to each communicating node pair or single multicast transmission.

As a result of this all-or-nothing channel allocation, Tancevski's invention does not allow for channel reuse in the ring (as does the claimed invention). Tancevski does not provide the link-by-link (hop-by-hop) channel status information which would be required to allocate non-overlapping arcs of the same channel around the circumference to a plurality of station-pairs, nor any description of apparatus to support such channel reuse (as does the claimed invention).

Thus, Tancevski fails to teach the element, ". . . wherein tokens advertise availability of receivers at a destination node and notify a source when a transmission did not succeed." As such, Tancevski fails to anticipate the invention as claimed in claim 1. Therefore, Examiner's rejection of claim 1 is improper and Applicant respectfully requests that it be withdrawn.

> 5. In regards to claim 2, Tancevski discloses the network of claim 1, wherein nodes evaluate the tokens to determine if a data payload is destined for and substantially simultaneously arriving at that node on one of the data channels (Figure 6 indicates each node monitors the status of every other node. Each node knows which nodes and transmitting and which nodes are receiving the transmissions, including themselves. As described in paragraph 26, the round trip time for a token is as little as 50 microseconds. This is sufficiently small to be simultaneous.)
>
> 6. In regards to claim 4, Tancevski discloses the network of claim 1, wherein each node of the network has fewer transmitters and receivers than data channels (Paragraph 27 indicates some or all stations are tunable to only a subset of the channels).
>
> 7. In regards to claim 10, Tancevski discloses the network of claim 1, wherein transmitting nodes reserve apparently available receivers at downstream nodes without external confirmation (paragraph 24, node reserves a channel without any outside confirmation).

Claims 2, 4, and 10 are dependent upon claim 1 and thus incorporate all of the limitations of claim 1. Because it has been shown that claim 1 is novel, claims 2, 4, and 10 are, likewise,

novel and not anticipated by Tancevski. Accordingly, Applicant respectfully requests that Examiner withdraw the rejection of these claims.

> 8. In regards to claim 12, Tancevski discloses a network comprising: a plurality of data channels (figure 2 element 24); a control channel (fig. 2.22); tokens which pass between nodes on the control channel (fig. 4.30); wherein nodes evaluate the tokens to determine if a data payload is destined for and substantially simultaneously arriving at that node on one of the data channels (Figure 6 indicates each node monitors the status of every other node. Each node knows which nodes and transmitting and which nodes are receiving the transmissions, including themselves: As described in paragraph 26, the round trip time for a token is as little as 50 microseconds. This is sufficiently small to be simultaneous.); and wherein each token includes an indication of a path reservation and an indication of a for the path reservation (Figure 6 indicates that each token includes information as to which channel is being used by each node.).

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. In re Bond, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990).

Tancevski fails to teach every element exactly as arranged in claim 12 of the claimed invention and thus fails to anticipate claim 12. As previously shown, Tancevski requires a round-trip time for a single communication of greater than 0.5 milliseconds (i.e., REQ/ACK/NACK, plus data) – far from being "sufficiently small to be simultaneous." To state alternately, a data transfer with Tancevski still requires a request/acknowledgement pair which must transit the entire ring and thus incur the full transit delay time. The current invention allows a node to determine if the node owns the payload data it is receiving *as it receives the payload*, without requiring an additional REQ/ACK/NACK.

Thus, Tancevski fails to teach the element, ". . . wherein nodes evaluate the tokens to determine if a data payload is destined for and substantially simultaneously arriving at that node on one of the data channels . . ." As such, Tancevski fails to anticipate the invention as claimed in claim 12. Therefore, Examiner's rejection of claim 12 is improper and Applicant respectfully requests that it be withdrawn.

> 9. In regards to claim 13, Tancevski discloses the network of claim 12, wherein tokens advertise availability of receivers at a destination node and notify a source when a transmission did not succeed (paragraph 27).

10. In regards to claim 14, Tancevski discloses the network of claim 12, wherein each node of the network has fewer transmitters and receivers than data channels (Paragraph 27 indicates some or all stations are tunable to only a subset of the channels).

11. In regards to claim 16, Tancevski discloses the network of claim 12, wherein transmitting nodes reserve apparently available receivers at downstream nodes without external confirmation (paragraph 24, node reserves a channel without any outside confirmation).

12. In regards to claim 17, Tancevski discloses the network of claim 12, wherein the network comprises a ring topology (fig. 1).

Claims 13, 14, 16, and 17 are dependent upon claim 12 and thus incorporate all of the limitations of claim 12. Because it has been shown that claim 12 is novel, claims 13, 14, 16, and 17 are, likewise, novel and not anticipated by Tancevski. Accordingly, Applicant respectfully requests that Examiner withdraw the rejection of these claims.

CONCLUSION

Applicant has adopted the Examiner's suggestions, where applicable, and believes the claims are now in condition for allowance. No new matter has been added by the requested amendments. It is respectfully urged that the subject application is patentable over references cited by Examiner. Applicant requests reconsideration of the application and allowance of the claims. If there are any outstanding issues that the Examiner feels may be resolved by way of a telephone conference, Examiner is cordially invited to contact David W. Carstens at 972-367-2001.

The Commissioner is hereby authorized to charge any shortages or credit any overpayments to Deposit Account 50-0392.

Respectfully submitted,

By: _____
David W. Carstens
Registration No. 34,134
Attorney for Applicants

Date: ___Aug 20___, 2007
CARSTENS & CAHOON, L.L.P.
P.O. Box 802334
Dallas, TX 75380
(972) 367-2001 *Telephone*
(972) 367-2002 *Facsimile*